Things to Know, Understand, and Do
AF Chapter 3: Atoms

By the end of Chapter 3, you should

Know (how to)…
Summarize and state the 5 points of Dalton's atomic theory
Explain the exceptions to atomic theory based on current knowledge
Explain the cathode ray experiments by J.J. Thomson and how they led to the discovery of the electron
Explain Millikan's Oil Drop experiment and how it measured the charge of and electron
Explain Rutherford's Gold Foil experiment and how it discovered the nucleus
Calculate the numbers of protons, neutrons, and electrons in atoms and isotopes
The actual and relative charges and masses of the nuclear particles
Designate different isotopes of elements by hyphen and symbol notations
The isotopes of hydrogen
Calculate average atomic mass for an element
Relate mass of elements to atoms by doing mole concept calculations
Find molar mass of an atom
Perform mole calculations
Understand…
The early history of atomic theory
The work of Democritus, Aristotle, the alchemists, and Lavoisier
How chemistry progressed as *technology* progressed
The relationship of Dalton's Atomic theory with the LCM, LDC, and LMP
The different models of the atom and how they have evolved through research
The atom is mostly empty space with a dense nucleus in the center
That an atom is composed of three particles
The nuclear particles are held together by nuclear strong forces
How relative atomic mass works
How to perform mole concept calculations properly
That one mole of anything is 6.022×10^{23} particles
THAT I MUST SHOW WORK IN EVERY CALCULATION OR I WILL NOT GET FULL CREDIT

Chapter 3 Homework

Read Ch 3

Answer the following questions

p 69 Q 2, 3
p 85 Q 2, 3, 5, 6
p 87 Q 2, 4, 5, 17, 19
p 88 Q 21, 23